

# ***Laser Florence 2017: Advances in Laser Medicine***

**Leonardo Longo**

*Editor*

**9–11 November 2017**

**Florence, Italy**

*Organized by*

IALMS—The International Academy for Laser Medicine and Surgery (Italy)

ISLSM—The International Society of Laser Surgery and Medicine

WFLSMS—World Federation of Societies for Laser Surgery and Medicine

IPTA—International Photo Therapy Association

ILM—Institute Laser Medicine Florence (Italy)

*Sponsored by*

UEMS—European Union of Medical Specialists

Italian Health Office

Florence Medical Association

Common of Firenze (Italy)

*Published by*

SPIE

**Volume 10582**

Proceedings of SPIE, 1605-7422, V. 10582

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at [SPIDigitalLibrary.org](http://SPIDigitalLibrary.org).

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *Laser Florence 2017: Advances in Laser Medicine*, edited by Leonardo Longo, Proceedings of SPIE Vol. 10582 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510620056

ISBN: 9781510620063 (electronic)

Published by

**SPIE**

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) Fax +1 360 647 1445

[SPIE.org](http://SPIE.org)

Copyright © 2018, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at [copyright.com](http://copyright.com). Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 1605-7422/18/\$18.00.

Printed in the United States of America

Publication of record for individual papers is online in the SPIE Digital Library.

**SPIE. DIGITAL  
LIBRARY**

[SPIDigitalLibrary.org](http://SPIDigitalLibrary.org)

---

**Paper Numbering:** *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

# Contents

- v *Authors*
- vii *Conference Committee*
- ix *Introduction*
- xiii *Conference Sponsorship and Support*

---

## PHOTO BIO MODULATION

---

- 10582 02 **Low level laser therapy (photobiomodulation) for the management of breast cancer-related lymphedema: an update** [10582-14]
- 10582 03 **Laser biostimulation therapy planning supported by imaging** [10582-3]
- 10582 04 **Treatment of complicated gangrene using infrared photodynamic therapy** [10582-5]
- 10582 05 **Approach and potentiality of low level laser therapy in veterinary medicine** [10582-9]
- 10582 06 **Photobiomodulation laser improves the early repair process of hypothyroid rats** [10582-18]
- 10582 07 **The effect of phototherapies on bone repair of euthyroid and hypothyroid rats: Raman spectroscopic study** [10582-19]
- 10582 08 **Laser therapy in women genital *Chlamydia trachomatis* infection complicated with PID and infertility** [10582-6]
- 10582 09 **Clinical and histological evaluation of laser therapy in the treatment of oral mucositis in an animal model** [10582-13]
- 10582 0A **Evaluation of phototherapy in the differentiation of mesenchymal stem cells in the tissue repair of rats submitted to a hyperlipidemic diet** [10582-21]
- 10582 0B **Muscle shortening maneuver and not topical anti-inflammatory therapy is effective in reducing the width of subacromial-subdeltoid bursa in shoulder impingement syndrome** [10582-23]

---

## LASER PHYSICS

---

- 10582 0C **Laser synthesis of hybrid nanoparticles for biomedicine** [10582-8]
- 10582 0D **Low-level laser therapy equipment needs calibration before clinical use** [10582-15]

- 10582 OE **Automatic classification of fluorescence and optical diffusion spectroscopy data in neuro-oncology** [10582-17]
- 10582 OF **Non-contact procedure to measure heart and lung activities in preterm pediatric patients with skin disorders** [10582-20]

---

**LASER SURGERY**

---

- 10582 OG **Face and labial rejuvenation with the new Nd-Yag 1064 picoseconds laser** [10582-10]
- 10582 OH **Varicose veins endoluminal laser ablation from the beginning EVLT till now CELIV** [10582-12]
- 10582 OI **Differential expression of myofibroblasts on CO<sub>2</sub> laser wounds and scalpel wounds: an experimental model** [10582-16]
- 10582 OJ **Ultrastructural analysis of dental ceramic surface processed by a 1070 nm fiber laser** [10582-22]